

variants for prevention of CMV disease and infection; in one aspect this use includes administration of such vaccine to human subjects.

Please amend the paragraph beginning at page 14, line 15, as follows:

Figure 5. CMV Towne and Toledo cosmids used to regenerate specific chimeric CMV viruses. The location of the cosmid insert are indicated beneath the appropriate viral genome. The numbers at the end of the insert denote the endpoints determined by DNA sequence analysis; the numbers correspond to AD169 genomic sequence in GenBank (EMBL accession number X17403). "XXX" " denotes an end which was refractory to DNA sequence analysis. These ends were mapped by restriction enzyme and Southern blot analyses. The vertical dashed line represents the location of the internal "a" sequence of the virus. The lower line depicts the structure of the Tol/Twn 39/50 genome. The thick gray line denotes sequences derived from Toledo and the thin black line depicts sequences contributed from highly-passaged Towne strain. Regions of overlap could be derived from either virus and are represented by a region of a thick gray and a thin black line together. The Tol/Twn 39/50 genome does not contain the Toledo genomic region.

Please amend the paragraph beginning at page 32, line 18, as follows:

In an aspect, the invention also provides attenuated live virus CMV vaccines wherein at least one open reading frame of a Toledo genomic region is replaced by a segment of Towne genome which is not present in AS169. The highly-passaged Towne genome comprises a region not present in AD169; the region contains open reading frame designated UL147, UL152, UL153, and UL154 and generally is spanned by nucleotides 178221 to 180029 of the Towne genome according to the AD169 (EMBL accession number X17403) numbering convention. An attenuated virus of the invention can, in one embodiment, comprise a Toledo genome wherein the Toledo genome region spanning open reading frames UL133 to UL151 are replaced with a Towne genome region spanning UL147, UL152, UL153, and UL154; this engineered CMV virus variant is an attenuated Toledo virus which comprises desirable features of Towne while reducing undesirable virulence of the Toledo genome region. The invention provides other variations of this basic method, whereby a segment of the Toledo genome region comprising at least one open reading frame is deleted or otherwise structurally disrupted in a CMV variant having a Toledo genome region or its homolog, and a segment of a Towne genome region comprising at least one open reading

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